STATE OF CALIFORNIA
DEPARTMENT OF GENERAL SERVICES - PROCUREMENT DIVISION

CONTRACT NOTIFICATION

***** MANDATORY *****

CONTRACT NUMBER: **1-06-97-06**

DESCRIPTION: **ATTENUATOR, TRUCK MOUNTED, BOX ASSEMBLY**

CONTRACTOR: **ENERGY ABSORPTION SYSTEMS INC**

EFFECTIVE DATES: **12/19/2006** THROUGH **12/18/2008**

SUPERSEDES CONTRACT NO.: **1-01-97-06**

AREA: **STATEWIDE**

DISTRIBUTION: **C-97-06**

* TAX: Add appropriate sales and use tax.
Exempt from Federal Excise Tax..

*Food contracts are tax exempt.

FOR RITA HAMILTON, Deputy Director

Use of this agreement by all agencies is mandatory with monetary exceptions stated herein or contained in State Administrative Manual.

To obtain assistance or report non-compliance by supplier, or for any suggestions or recommendations write:

Department of General Services, Procurement Division, P.O. Box 989054, W. Sacramento, CA 95798-9054, or call: Contract Administrator, **BRADLEY WATSON** **916-375-4463**

Contract (Mandatory): 1-06-97-06

SUPPLIER ID:	255627
NAME:	ENERGY ABSORPTION SYSTEMS INC
ADDRESS:	35 E WACKER DRIVE #1100 CHICAGO, IL 60601
CONTACT:	312-705-8455 MICHAEL DOWNING
FAX NUMBER:	800-770-6755
TERMS OF PAYMENT:	Net
FOB:	Destination
MINIMUM ORDER:	ONE (1) ATTENUATOR

SCOPE:

This contract covers the estimated two (2) year requirements of the State of California and participating local agencies for ATTENUATOR, TRUCK MOUNTED, BOX ASSEMBLY. In addition, this contract contains an option for one (1), one (1) year extension under the same terms and conditions of the awarded contract. The State and contractor must agree on the extension via a contract amendment. This contract is a MANDATORY contract.

A local agency is any city, county, and county district, or local governmental body or corporation empowered to expend public funds (California Public Contract Code Section 10298).

ORDERING PROCEDURE:

State agencies will complete a Contract/Delegation Form (Std. 65) indicating contract number, stock item number, description, unit price and extension on each order and submit it directly to the contractor or an authorized dealer as listed in the contract. Local Agencies may submit a local agency purchase order following the same guidelines as described above.

CONTRACTOR MUST ACCEPT ORDERS BY FACSIMILE OR E-MAIL TRANSMISSION:
By signing and submitting the solicitation, the bidder agrees to accept orders by facsimile and/or e-mail transmission. Please show business facsmile and e-mail address below.

Facsimile Number: (800) 770-6755
E-Mail Address: mpagnucci@quixtrans.com

CONTRACTOR'S LOCATIONS:

List below the locations to which Contract/Delegation orders should be sent.

Company Name:	Energy Absorption Systems, Inc.
Street Address:	35 East Wacker Drive, Ste. 1100
City, State and Zip:	Chicago, IL 60601
Contact Person:	Michael Downing

MINIMUM ORDER:

The minimum order is one (1) attenuator.

DELIVERY:

Delivery is to be completed in full within 30 calendar days after receipt of order by the contractor. (Exception: The maximum number of attenuators required to be delivered in any calendar month shall not exceed 20 units.)

Contract (Mandatory): 1-06-97-06

Note: In accordance with paragraph 15 of the General Provisions entitled "Delivery", the contractor shall strictly adhere to the delivery terms and completion schedules as specified in this contract. Failure to comply with the delivery requirements as stated, may be considered a breach of contract and subject the contractor to General Provisions 26, entitled "Rights and Remedies of the State for Default".

CONTRACTOR RESPONSIBILITIES:

1. Contractor shall perform all deliveries to facilities in a safe and professional manner. Contractor's equipment shall be in good working order and all personnel shall be trained in safety measures to preclude accidents endangering personnel or property.

2. Contractor must commit to delivery as requested, at time stated on accepted orders, through the term of the contract.

3. Contractor shall provide office and personnel resources for responding to requests, including telephone coverage weekdays during the hours of 8:00 AM through 5:00 PM.

PACKAGING:

Exterior packaging is to show the contents and the order number. All packaging is to conform to the applicable freight classifications, Surface Transportation Board and/or Postal regulations, and is to be of a quality to assure final delivery without damage to the contents.

All pallets employed in the delivery of the product shall be of sturdy construction and adequate condition to assure delivery without damage to the product and to insure prevention of safety hazards. All pallets must comply with the State of California Specification 3990-01A-01, dated January 2001.

SPECIFICATION COMPLIANCE:

All products must conform to the State of California Bid Specification Number 079-2062-051, dated November 2005. Products not meeting all specified requirements will be deemed non-compliant to specifications and will be returned at the contractor's expense. The contractor shall replace all rejected/non-compliant product with fully compliant new stock, at no cost to the State, within 10 calendar days from notice of non-conformance.

Items offered must be standard catalogued items for which printed literature and specifications are available.

WARRANTY:

Please refer to Item 12, page 7 of 10, of the State of California Bid Specification Number 079-2062-051 for warranty requirements.

PRICES:

All prices shall be maximum for the contract period subject to the State receiving full benefit of all manufacturer's price declines effective on the date of manufacturer's general public announcement.

For the purpose of this contract, only F.O.B. Destination will be accepted.

Prices shall be all inclusive. Only the prices/charges submitted in the bid shall be accepted and included in this contract. NO OTHER FEES CAN BE CHARGED TO THE CUSTOMER.

Contract (Mandatory): 1-06-97-06

SALES TAX:

Sales tax is not to be included on the bid or in the bid pricing. Sales tax should be added at time of invoicing. The sales tax rate applied should be based on the rate of the area the product is to be delivered to.

QUANTITIES:

Quantities shown for each line item in the bid are estimated for evaluation purposes only. Actual purchasing patterns may vary. The State will not be obligated to purchase contractor's excess inventory if actual purchases vary from the anticipated purchasing pattern. The State reserves the right to order more or less of any line item in this contract.

CONTRACT USAGE REPORTING:

The contractor is required to submit a detailed usage report every three months commencing from the date of award to the Procurement Division, Contracts Management Unit. All appropriate fields must be completed on this form, including the name and phone number of person completing the form. Invoice copies or list of purchase orders will not fulfill this requirement and will not be accepted.

FAILURE to submit COMPLETED quarterly reports within the time period required may be considered a breach of contract and subject the contractor to General Provisions 26, "Rights and Remedies of State for Default".

INVOICING REQUIREMENTS:

The contractor is to render invoices as instructed on individual orders. Invoices shall include the order number, contract number, item number, description, unit price and extensions. All applicable taxes shall be noted and added to each invoice.

Invoices shall be billed according to unit of measure and unit price as indicated in the contract. Deviations/substitutions will not be permitted.

The State's obligation to make payment pursuant to the contract is subject to availability of appropriated funds. Receipt of a contract/delegation purchase order under this contract is proof of funds for that order.

Contract (Mandatory): 1-06-97-06

ITEM NO.	COMMODITY NO. SUPPLIER PART NO.	SUPPLIER NO.	UNIT	DESCRIPTION	UNIT PRICE
1	9706-970-1003-9	255627	EA	BARRIER CRASH ENERGY ABSORBING CARTRIDGE/CELL TYPE Attenuator, Truck Mounted Box Assembly. Attenuators must comply with State of California, Department of Transportation Specification Number 079-2062-051, dated November 2005. Brand: EASI Model: 3524804-1500 (350DX CARTRIDGE) FOR DATA ENTRY USE ONLY	4,180.0000
2	9905-909-0001-1	255627	VA	SIGNMB-DGS/PROCUREMENT USE ONLY	VARIABLE

STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION
DIVISION OF EQUIPMENT

ITEM NO	UNIT	CAB	TRANS	ENG	CAP	C.A.	F.A.	R.A.

SPECIFICATION NUMBER: 079-2062-051

SPECIFICATION FOR: ATTENUATOR, TRUCK MOUNTED – BOX ASSEMBLY

SPECIFICATION DATE: NOVEMBER 2005

It is the intent of this specification to describe the minimum requirements for a truck mounted replacement attenuator box assembly, meeting the requirements of NCHRP 350, that will be attached to existing mounting hardware on various highway maintenance vehicles. Whenever the word "attenuator" is used, it is meant to be a Truck Mounted Attenuator (TMA) box assembly built to these specifications. Drawings Number P2-A001-01, P2-A001-02, and U1-A010-02 form a part of this specification.

1. VENDOR'S RESPONSIBILITY:

   A. Supply all material.

   B. Construct all attenuators.

   C. Pay for all testing unless otherwise noted (See Item 4. TESTING).

   D. Supply test results per National Cooperative Highway Research Program (NCHRP) Report 350, Test Level 2. Test results shall be certified by a Licensed Mechanical Engineer.

   E. Supply test results for vibration, moisture, and corrosion tests per Item 4. B. VIBRATION, MOISTURE, CORROSION TESTS. Test results shall be certified by a Licensed Mechanical Engineer.

F. Caltrans shall retain the right to test a production unit TMA box assembly per specified NCHRP, Test Level 2 requirements; or, the vibration, moisture, corrosion test requirements. Caltrans shall be responsible for any costs related to such retest(s).

2. DESIGN AND CONSTRUCTION: The attenuator assembly shall consist of three (3) basic components: basic attenuator, lights/harness, and rear jack. The attenuator assembly shall be constructed, assembled, wired and painted in accordance with these specifications.

The attenuator shall have an overall height of 24 inches, ±2 inches; an overall width of 94 inches, +0, -2 inches; and, an overall length not to exceed 100 inches.

The attenuator shall be adaptable to existing headframe and mounting hardware presently in use by the Department of Transportation (See Dwg. No. P2-A001-01).

The attenuator shall be designed, constructed and tested to protect the occupants and vehicle from errant vehicles striking it from the rear.

The attenuator assembly shall be designed and constructed such that the impact end of the attenuator resists 'nuisance hit' damage at speeds up to 5 miles per hour (8 kilometers per hour).

The attenuator box, when impacted, shall be designed and constructed so that its components are retained and will not be obstacles to nearby traffic.

The attenuator assembly shall be designed so that it can be removed from its carrier vehicle and moved to a storage area without the need of additional support or transfer equipment. This will be accomplished by leaving the attenuator assembly attached to the state installed 'headframe' with integral vertical adjusting jacks equipped with swivel castors; and, the vertical rear adjusting jack supplied with each attenuator. The rear center mounted vertical adjustable jack shall be supplied with a swivel castor and shall have a 500 pound minimum capacity. The jack shall have a minimum travel of 14 inches.

3. WEIGHT AND WEIGHT CERTIFICATION: The attenuator assembly, when constructed, assembled, wired and painted in accordance with these specifications shall weigh not more than 425 pounds.

Caltrans inspection personnel may witness the weighing of an attenuator assembly during the inspection of the first production article (see Item 15. INSPECTION).

4. TESTING: The attenuators shall withstand physical tests as outlined. See attached *Test Method and Procedure for Truck Mounted Attenuator Box Assembly.*

   A. Crash Test: Two (2) attenuators shall be subjected to crash testing in accordance with NCHRP 350, Test Level 2. One attenuator shall be struck head-on by a vehicle weighing 820 kg (1808 lbs.), and the second attenuator shall be struck head-on by a vehicle weighing 2000 kg (4410 lbs).

   Test results (certified test reports, associated reports, films, etc.) shall be certified by a Licensed Mechanical Engineer. The engineer's certification document shall contain his Professional Engineer (P.E.) stamp and shall be submitted with the bid to supply the attenuators.

   B. Vibration, Moisture, and Corrosion Tests: One (1) attenuator assembly shall be subjected to four tests in the sequence outlined below.

      1. Two (2) Vibration tests.
      2. One (1) Moisture test.
      3. One (1) Corrosion test.

   Test results (certified test reports, associated reports, films, etc.) shall be certified by a Licensed Mechanical Engineer. The engineer's certification document shall contain his Professional Engineer (P.E.) stamp and shall be submitted with the bid to supply the attenuators.

5. PRINTS: Three (3) sets of customer reference prints of the attenuator, identified by model number and traceable to all attenuators tested and supplied under these specifications, shall be submitted with the bid.

   These prints shall clearly define the attenuator assembly configuration, all pertinent dimensions, external parts and material utilized in the manufacture and assembly of the delivered attenuators.

   Drawings shall be of such quality and detail that a unit may be inspected utilizing said prints.

6. TRACEABILITY: Each production and test attenuator shall be individually identified with a Serial Number (S/N) and a Model Number (M/N) such that a record of its history can be maintained with that S/N and M/N identification. The S/N and M/N shall be located together on the left (street) side, at the lower front corner. The letters and/or numbers used in the M/N and S/N shall be not less than 2-inches high and shall be permanently imprinted into the base metal and identifiable through the painted finish.

All test results, test procedures, supporting documentation (both preliminary and final), crash films, and engineering prints submitted shall show S/N and M/N of the attenuator assembly used.

7. ELECTRICAL EQUIPMENT: Lights shall be installed on the attenuator assembly. Each unit shall have two (2) tail lights, (2) stop lights, turn signal lights, and side marker lights (these lights may be in combination); one (1) set at each rear corner of the attenuator assembly. ICC identification lights shall be mounted at the center rear near the top. These lights may be offset up to three (3) inches from the centerline of the unit to provide better visibility. All lights shall be light emitting diode (LED) type. Retro-reflective tape reflectors (Ref. Petersen Mfg. #B490R and #B490A, or comparable), shall be used where needed to meet FMVSS requirements for Class A reflectors.

Wiring may be internal (preferred), or mounted on the outside of the attenuator assembly. If mounted on the outside of the attenuator, the wiring shall be securely attached by mechanical clips at not more than 18-inch intervals.

All wiring installed by the manufacturer or supplier shall be the stranded copper type, shall have cross-linked polyethylene insulation, and be protected in vinyl plastic auto loom. Where applicable, rigid or flexible conduit may be used. The edge of all metal members which wire harness or loom pass through shall be deburred, flanged, rolled, or bushed with suitable grommets. In general, wire routing shall be such that maximum protection is provided by the vehicle sheetmetal and structural components.

Adequate size gauge wire shall be used in accordance with SAE standards for distance from the power source and load demand.

The wire ends shall be mechanically stripped and the terminals crimped securely with the appropriate tool.

Appropriate tools shall be the following, or comparable, for use and purpose as applicable:

Wire Stripper: Ideal Industries, Inc., Catalog Number 45-092.

Cable Stripper: Ideal Industries, Inc., Catalog Number 45-128.

Multi-Crimp Tool: Ideal Industries, Inc., Catalog Number 30-429.

Cutting Pliers: Klein Tools, Inc., Number 7YLL (1104).

All splices shall be sealed against moisture. Scotch Lock wire-type piercing devices shall not be used. All electrical work and installation of equipment/

devices shall be completed in a workmanlike manner, mechanically and electrically secure. Devices, lamps, etc., requiring periodic service shall be serviceable and accessible by providing wire length to reasonably accomplish this.

A seven-wire SAE standard trailer light plug (Ref. Pollak No. 11-700 with the No. 11-763 cable guard) shall be installed on trailer cable extending 36 to 42 inches beyond the top center front of the attenuator assembly. The plug supplied must mate with Pollak NO. 11-721 socket in use on State trucks. A wiring schematic, Drawing No. U1-A010-02, for the plug and wire color code is attached. The attenuator shall have a storage socket for the plug while the plug is not in use (Ref. Cole-Hersee, "Stor-a-Way" 7 way plug holder or comparable).

8. WELDING: All welding shall comply with the requirements as represented in American Welding Society (AWS), D14.3-82, and American National Standard entitled "Specification for Welding Earthmoving and Construction Equipment."

All welds shall be performed by personnel who are certified in accordance with the requirements as established by AWS. Personnel who perform any welds on the units shall have the proper certification documents indicating they are qualified to perform the type, size, and position of the weld performed, with the welding process utilized, and on the material being welded. The supplier will be required to supply proof of current welding certifications for personnel performing any welding on the unit, upon request of the State, whether written or verbal.

All welds shall be continuous except as noted. Intermittent or spot welds shall be spaced and proportioned to provide ample strength for the material being welded. Weld sizes not indicated shall be equal to the thickness of the least of the joined plates.

All welds shall be properly fused, displaying proper penetration and a professional finish, and must meet the qualification requirements of applicable AWS specifications. Examples of unacceptable weldments are:

a.	Cracks	d.	Excessive Splatter
b.	Undercut	e.	Blow Holes
c.	Overlap	f.	Slag Entrapment

Any weld failing to comply with the AWS specification or failing to pass a quality assurance inspection performed by the State, will be corrected by the manufacturer, at their expense, and be corrected off State property. The State shall determine if a weld is acceptable or deficient.

Any deficient weld shall be corrected by a welder who is certified in accordance with the requirements as established by AWS. The welder shall have the proper certification documents indicating that he/she is qualified to perform the type, size, and position of the weld performed, with the welding process utilized, and on the material being welded. The supplier will be required to supply proof of current welding certifications for personnel performing any re-welding on the unit, upon request of the State whether written or verbal.

GRINDING OF WELDS must have prior approval of the Department of Transportation, Division of Equipment, Engineering Specifications. Welds which have been ground without approval shall be subject to complete re-welding upon request, at no additional cost to the State.

All assembly dimensions and tolerances on drawings apply after welding. Excessive warpage of assembled parts is not acceptable. Weld symbols on drawings shall be interpreted per American National Standard Welding Symbols. In the event of the lack of a weld symbol, the best commercial practice shall prevail. The covering of welds with body fillers or similar materials is unacceptable.

9. PAINT: All exterior metal surfaces shall be finished with a lead-free, corrosion resistant primer and a finish paint coat as described below. All interior ferrous metal surfaces shall be finished with a corrosion resistant primer.

   Any plywood used in construction of the unit shall be marine grade medium density overlay (MDO) plywood. Any wood edges and saw cuts shall be treated with Woodlife Preservative, or comparable. Any wood surface shall be prime coated and the exposed surfaces shall be finish coated with the paint described below.

   The basic unit and the primary finish surfaces of any optional equipment shall be finish coated with lead-free Cardinal Gloss #6609 Federal Standard Color #13655 Yellow, or equivalent. The finish coat shall be free from runs, drips, sags, etc., and shall be evenly applied to provide a gloss finish. The finish or top coat shall be compatible for re-coat or touch-up with the paint referenced above. Compatibility and comparability will be determined by Caltrans. Other minor or incidental component parts may be finished according to the standard factory finish. (Cardinal Industrial Finishes: Contact your local distributor, or; 1329 Potrero Avenue, El Monte, CA 91733; 213-283-9335; or, 890 Commercial Street, San Jose, CA; 408-452-8522).

10. SAFETY MARKING: The rear face of the attenuator assembly (as viewed in the horizontal position) shall have a retroreflective sheeting, vehicle marking safety decal with orange and white striping as follows:

A. MATERIAL: The sheeting shall be of a highly flexible, durable, adhesive-backed, metallized, micro-prismatic type retro-reflectorized material having a smooth, flat, outer surface (Reference: Reflexite Daybrite Material, or comparable) and shall be finished with an exterior grade, ultraviolet stabilized, clear coat material. Backing shall be easily removed by peeling without soaking in water or other solutions. Decal surface shall be weather resistant and show no appreciable cracking, blistering, crazing, or dimensional change after at least six (6) years of unprotected outdoor exposure.

B. COLOR: Orange and white to meet ASTM D 4956-00 table 10.

C. REFLECTIVITY: Reflectivity shall meet ASTM D 4956-00 Type IV for minimum retro-reflectivity.

D. ADHESIVE: The sheeting shall be precoated with a pressure-activated adhesive that allows positioning on clean, dry surfaces without bonding until pressure activated. The sheeting shall be capable of being easily positioned or repositioned in temperatures ranging from 50 degrees minimum to 100 degrees maximum, provided the adhesive has not been pressure activated. The adhesive shall be protected with a removable liner.

E. SIZE: Approximate overall width (height) of the safety striping shall be eight (8) inches. The overall length of the safety striping shall extend from the left hand edge of the rear face to the right hand edge of the rear face (94-inches, +0, -2 inches). The safety striping shall be centered across the entire width of the attenuator. Stripes shall be in an alternating pattern of six (6) inches orange and six (6) inches white and slant from lower left to upper right at a 45° angle. (NOTE: The decal may be applied in two (2) pieces if necessary to accommodate the design of that portion of the attenuator which provides resistance to 'nuisance hits' damage.)

11. WORKMANSHIP: The equipment and any accessories shall be a product of good workmanship and shall be free from any defects that will affect their appearance or serviceability.

12. WARRANTY: The unit and any optional accessory shall be free from defects in workmanship and materials and be covered (parts and labor) under warranty for two (2) years following the date the Department of Transportation (Caltrans) puts the unit into service. Caltrans will notify the supplier by mail of the in-service date.

A copy of the manufacturer's standard warranty for the unit, any accessory, optional equipment, and components shall be submitted with the bid and

supplied with each unit at delivery. The manufacturer will be held responsible for warranty (commencing from the date Caltrans puts the unit into service) for the following circumstances:

1. The manufacturer's standard warranty exceeds two (2) years. Under this circumstance, the supplier is responsible until one (1) year is reached.

   The manufacturer will be held responsible for the balance of the manufacturer's standard warranty.

2. The supplier is no longer an authorized dealer of the equipment supplied. Under this circumstance, the manufacturer will be held responsible for the balance of the manufacturer's standard warranty. The manufacturer shall establish a fully operational warranty service provider with capabilities equal to or exceeding the supplier's (or his designated warranty provider) within 45 days of the supplier's authorized dealer termination.

If the supplier is not the manufacturer or manufacturer's authorized representative, then a statement agreeing to the warranty conditions stated herein shall be signed by the manufacturer and submitted upon request prior to Purchase Order award.

Any supplier or manufacturer non-compliant with the warranty provisions set forth herein may be subject by the Procurement Division, Department of General Services, State of California to be removed from any future bidding.

13. SAFETY: The entire unit and accessories shall comply to the applicable provisions of the California Vehicle Code, the Safety Orders of the Division of Industrial Relations, and all Federal regulations in effect at the time of manufacture.

14. COMPLIANCE CERTIFICATE: There shall be a certificate delivered with each attenuator assembly on the order showing that the unit meets the specifications for material and construction of the approved test unit. Each certificate shall include the following:

   A. Manufacturer's name, address and telephone number.

   B. Attenuator model number.

   C. Attenuator serial number.

   D. Attenuator weight.

15. INSPECTION: One (1) attenuator assembly, the first production or pre-production unit manufactured for this contract, shall also serve as the first

production article for inspection purposes.

The inspections shall be conducted by the Department of Transportation, Division of Equipment, Quality Assurance. These inspections shall take place at an adequate site provided by the vendor within the State of California. The inspection site shall meet all of the following criteria:

A. The site shall not be the Purchase Order delivery destination. The site shall be paved, secure and zoned for commercial use.

B. The site shall include electricity, lights, water, compressed air and a secure paved lot. The facilities shall also include lift equipment adequate to raise the units and support them on safety stands with a minimum of 12 inches of tire clearance. The supplier shall provide conditions which meet the safety standards of CAL-OSHA and Title 8 of the California Code of Regulations.

C. The adequacy of the site shall be determined by the Department of Transportation, Division of Equipment, Quality Assurance Section. Contact the Quality Assurance Chief at (916) 227-9709 for approval.

D. If the facility is deemed unacceptable by the Department of Transportation, Division of Equipment, Quality Assurance Section, the vendor shall be billed for the inspection trip including wages and expenses. This cost shall be deducted from the purchase order payment.

If the supplier receives notice that the unit(s) is not acceptable, whether written or oral, the unit(s) shipped to the Purchase Order destination shall be removed within seven (7) calendar days. If the supplier fails to remove said unit(s) from the State's facilities within the specified period, the State may forward said unit(s) to the supplier by common carrier at the supplier's expense and risk.

Acceptance of delivery or placement in service of any equipment shall not release the manufacturer from liability for faulty design, workmanship, or materials appearing even after final payment has been made.

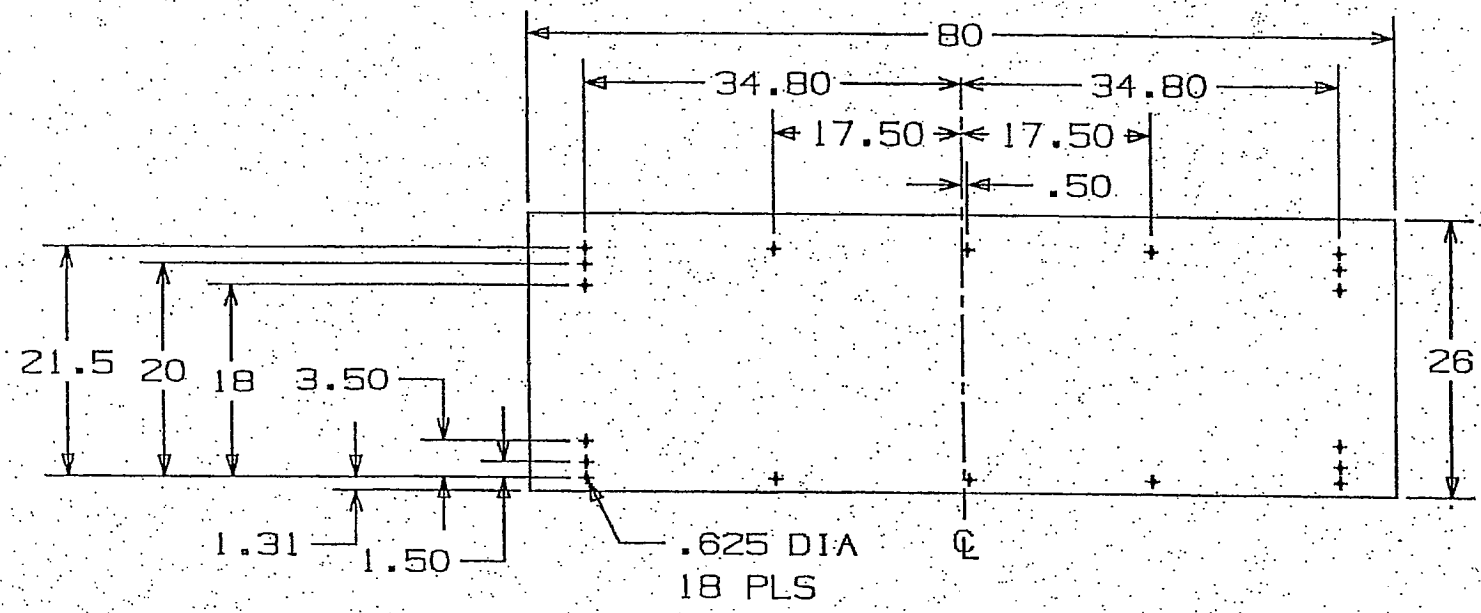
16. DELIVERY: Shipping and delivery instructions will be as stated in the purchase orders from Department of Transportation, Division of Equipment Shops located throughout the State of California.

The minimum purchase order quantity shall be one (1) unit.

Each attenuator assembly delivered shall be completely wrapped and sealed with not less than a six (6) mil thickness of clear plastic sheeting and secured on a shipping pallet.

Pallets shall be of a type for use with forklift trucks and shall be of a quality and construction to safely carry the weight and material loaded on the pallet.

17. PAYMENT: Process for payment will be initiated when all units on the order are received and deemed acceptable. The discount period will start after acceptance of each unit on the Purchase Order.



REV	DATE	DESCRIPTION	BY
A	10/92	UNOBSOLETED & REDRAWN ON CADD	GIROUX

NEXT ASSEMBLY

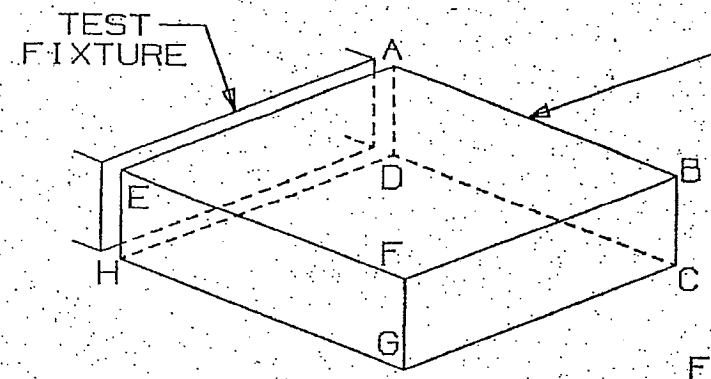
TOLERANCE-UNLESS OTHERWISE SPECIFIED
DECIMAL ± .03
FRACTIONAL ± 1/16
ANGULAR ±

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

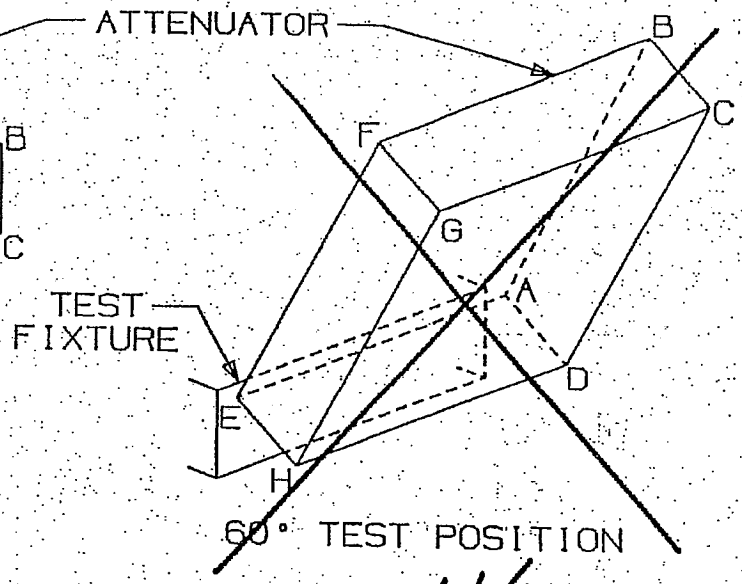
OFFICE OF EQUIPMENT

STANDARD ATTENUATOR MOUNTING BOLT PATTERN

SCALE 1/16	DATE	P2-A001-01
DRAWN GIROUX	DESIGNED	
CHECKED	APPROVED	SHEET 1 OF 2 SHEETS

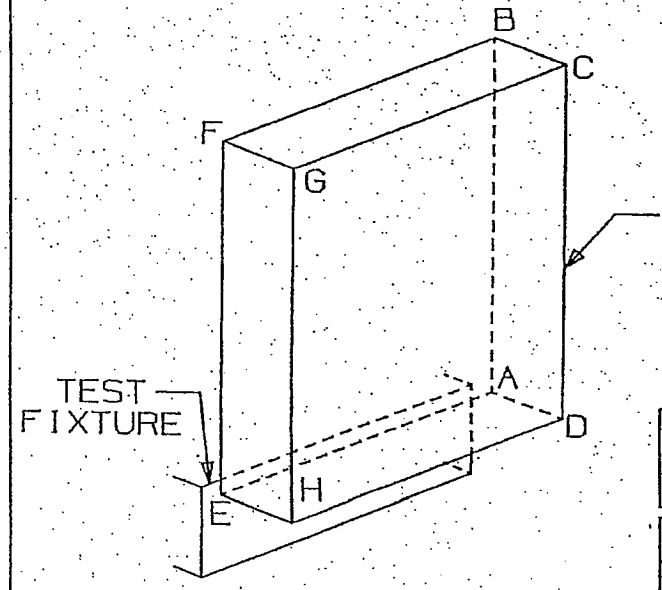


HORIZONTAL TEST POSITION



60° TEST POSITION

N/A



90° TEST POSITION

REV	DATE	DESCRIPTION	BY
A	10/92	UNOBSOLETED & REDRAWN ON CADD	GIROUX

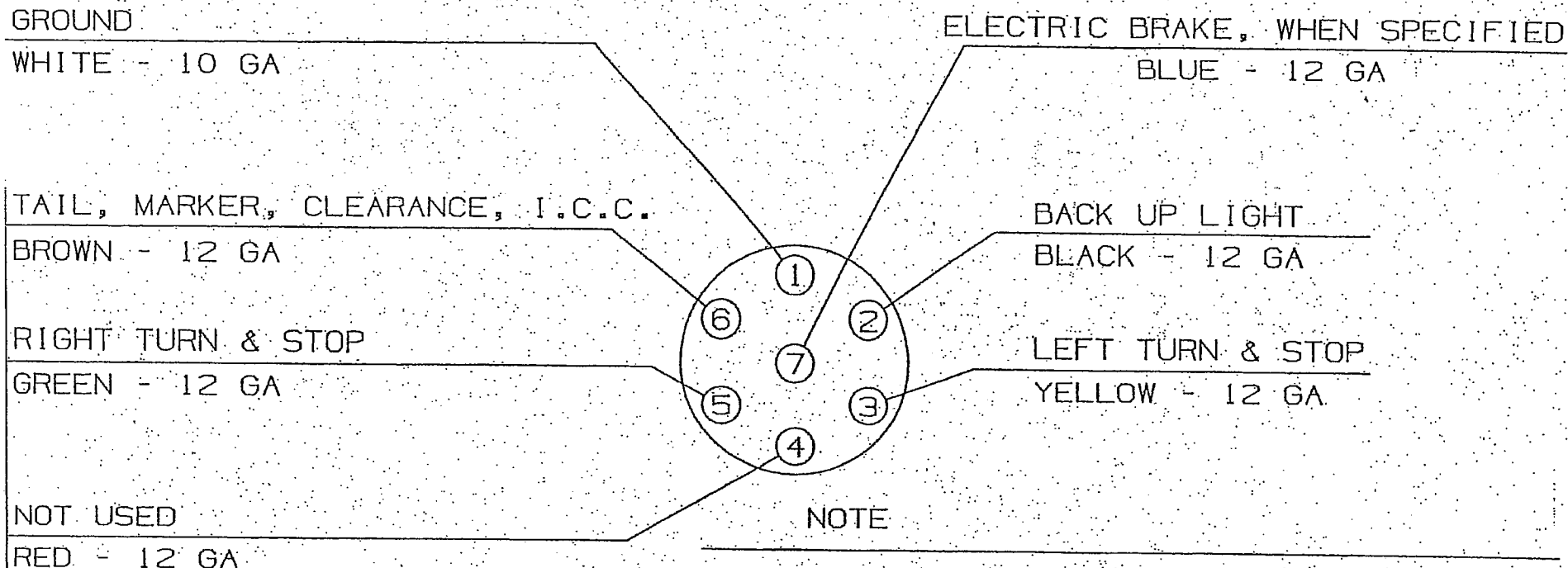
NEXT ASSEMBLY

TOLERANCE-UNLESS OTHERWISE SPECIFIED
DECIMAL ±
FRACTIONAL ±
ANGULAR ±

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
OFFICE OF EQUIPMENT

STANDARD ATTENUATOR
TEST POSITIONS

SCALE 1/32	DATE	P2-A001-02
DRAWN GIROUX	DESIGNED	
CHECKED	APPROVED	SHEET 2 OF 2 SHEETS



NOTE

1 - USE 7 WIRE RUBBER COVERED CABLE
1-10 GA & 6-12 GA
2 - COMBINATION STOP, TAIL, & TURN LIGHTS.
3 - POLLAK 11-700 PLUG WITH 11-763 CABLE GUARD. (REFERENCE)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

OFFICE OF EQUIPMENT

WIRING SCHEMATIC FOR TRAILER PLUG

SCALE NONE	DATE 3/12/84	U1-A010-02
DRAWN GTH	DESIGNED STAFF	
CHECKED	APPROVED	SHEET 2 OF 2 SHEETS

Test Method and Procedure for Truck Mounted Attenuator Box Assembly

1. SCOPE: This test method and procedure covers a truck mounted replacement attenuator box assembly that will be attached to existing mounting hardware on various highway maintenance vehicles. It forms the basis for the Vibration, Moisture and Corrosion tests outlined in Item 4.B. of the Specification

2. VIBRATION, MOISTURE, CORROSION TESTS:

A. Vibration Tests – Two (2) vibration tests will be conducted on the same complete attenuator assembly attached to a State-supplied (if required) head frame. Only those tie-downs or supports included in the production model will be allowed. Vibration Data forms and Vibration Test Time Log Forms (attached for reference) may be used as a guide for recording the data required to be submitted.

The attenuator assembly shall be weighed prior to and when both vibration tests are complete. The attenuator shall be weighed utilizing a certified scale. The certified weights shall be recorded and must be submitted.

Test No. 1: The attenuator assembly shall be mounted to the vibration apparatus in its normal horizontal operating position as shown on the attached Dwg. No. P2-A001-02. The indicated measurements shall be recorded prior to and during this vibration test.

Test No. 2: The attenuator assembly shall be mounted to the vibration apparatus in its travel position elevated to 90° as shown in Dwg. No. P2-A001-02. The indicated measurements shall be recorded prior to and during this vibration test.

For both tests: The test fixture will be free of springs or dampeners, and shall have a vertical pivot point that is located 139 inches , ±9 inches, forward of where the attenuator attaches to the basic support structure, and capable of inducing the required frequency and excursion into the attenuator through a mechanically positive system. Photos of the attenuator assembly mounted to the test fixture in the horizontal and 90° position must be submitted.

The frequency of the vibration will be 6 to 8 hertz for a period of 40 hours total for each test. Excursion is to be 0.60 inch, ±0.05 inch, measured peak to peak vertically at the location where the attenuator attaches to the back support. On completion of each of the above tests, record the measurements on a Vibration Data Form. Measurements before and after each vibration test will be recorded with the attenuator assembly mounted horizontal and 90° as shown on

Dwg. No. P2-A001-02. An 0.50 inch variance of any dimension, damage to energy absorbing cells that would affect their performance, damage to the back support, any exterior skin, light bracket attachment or rear jack support will constitute failure of the unit.

B. Moisture Test – The moisture test will be conducted with the complete attenuator assembly equipped per Item 2. DESIGN AND CONSTRUCTION, of this Specification. The complete attenuator assembly shall be weighed prior to and after the moisture test, utilizing a certified scale. These certified attenuator weights must be submitted. The attenuator will be placed in its horizontal position and subjected to a precipitation of 6 inches of water per hour delivered from nozzles which spray solid cones, mounted so that the required precipitation is evenly distributed over the entire area of the attenuator – top, sides, and ends. After a period of 24 hours, minimum, the attenuator will be turned over on its top side and the precipitation continued on its bottom side for an additional 24 hours minimum. The water shall be turned off, the attenuator returned to its normal operating position, and the attenuator allowed to drain for one (1) hour. The attenuator will then be examined. The complete top covering of the attenuator assembly shall be removed and the energy absorbing cells shall be examined and a photograph of these energy absorbing cells shall be submitted with the moisture data.

   The cells shall be completely free of moisture absorption and retain 100% of their energy absorbing qualities. The results of the examination of the energy absorbing cells for moisture retention must be submitted.

   Attenuator cells showing retention of moisture by absorption or any damage will constitute failure.

C. Corrosion Test – A sample of attenuator cell material shall be subjected to a salt spray (fog) test in accordance with ASTM B117-85, Method of Salt Spray (Fog) Testing, for a period of 50 hours, consisting of two (2) periods. Each period shall consist of 24 hours exposure and one (1) hour drying time.

   The sample taken of the cell structure shall consist of a section with a minimum dimension of 4-inches by 4-inches by 4-inches, and must include any adjacent bonding material. Photographs of the sample cells structure will be made prior to and after removal from the attenuator assembly. Also, photographs will be made of this same cell sample prior to and after the corrosion test. All photographs listed above must be submitted with the corrosion test results.

   Immediately after the device has been subjected to the corrosion test, there shall be no evidence of corrosion which would affect the energy absorbing qualities of the sample.

Model No.: _____
Serial No.: _____

VIBRATION TEST
TIME LOG
NORMAL OPERATING POSITION (HORIZONTAL)

Date/ Initials	Start	Stop	Hours	Freq./ Ampl.	Date/ Initials	Start	Stop	Hours	Freq./ Ampl.

Total Hours _____

Total Hours _____

Model No.:_____
Serial No.:_____

VIBRATION TEST
TIME LOG
NORMAL OPERATING POSITION (90° UP)

Date/ Initials	Start	Stop	Hours	Freq./ Ampl.	Date/ Initials	Start	Stop	Hours	Freq./ Ampl.

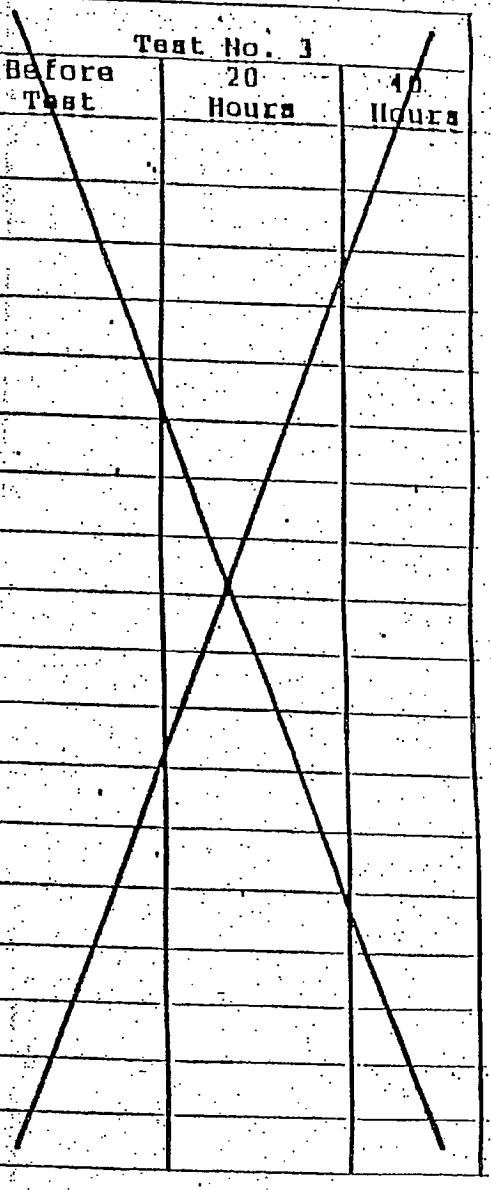
Total Hours_____

Total Hours_____

Model No.: _____
Serial No.: _____

ATTENUATOR REPLACEMENT BOX
VIBRATION DATA FORM

Dimension In Inches	Test No. 1			Test No. 2			Test No. 3		
	Before Test	20 Hours	40 Hours	Before Test	20 Hours	40 Hours	Before Test	20 Hours	40 Hours
A to B									
B to C									
C to D									
A to D									
E to F									
F to G									
G to H									
E to H									
A to E									
D to H									
B to F									
C to G									
A to F									
B to E									
B to G									
C to F									
E to G									
F to H									



STATE OF CALIFORNIA SPECIFICATION

PALLETS, WOODEN

1 SCOPE

This specification covers pallets intended for use with low lift pallet trucks or forklift trucks.

2 SPECIFICATION AND STANDARDS

Specifications and standards referenced in this document in effect on the opening of the Invitation for Bid form a part of this specification where referenced.

3 REQUIREMENTS

3.1 Material

The pallets shall be constructed from nominal size standard or better (West Coast Lumber Inspection Bureau, Standard Grading Rules for West Coast Lumber) grade Douglas Fir, Hemlock, Larch or Hem-Fir. The stringers shall be S4S and the decking S4S or S1S2E (re-

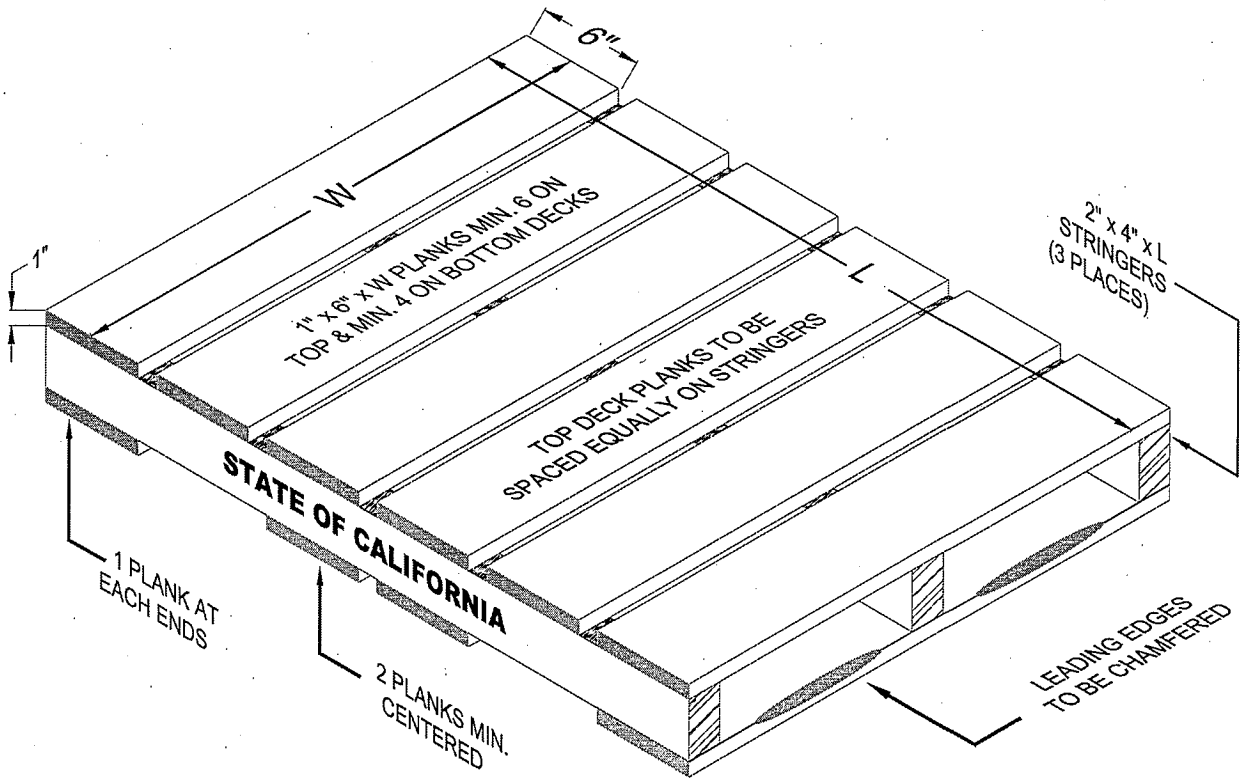


FIG. 1 - TYPE 2 WOODEN PALLET

sawed) with no edge knots. Sawed side is to be assembled to the inside of the pallets. Fastening shall be accomplished with 2¼ inch (+1/16 inch) 7 penny flat head drive screws (helical threaded nail) or 2¼ (+1/16 inch) #10 wire gauge annular ring nails as recommended in Specifications and Grades for Warehouse. Permanent or Returnable Pallets of West Coast Woods as published by the National Wooden Pallet and Container Association (Specifications and Grades, NWPCA).

3.2 Non-Standard Duty-Cycle Pallets

When specifically requested by the user, pallets may be manufactured using pine, oak or ash woods.

3.3 Construction

Pallet type and construction shall comply with Specifications and Grades, NWPCA. The pallets shall be Grade "Quality" (QAL).

The decking shall be secured with 3 nails or screws at each surface of contact with the stringer. Nails shall not be within ½ inch of deck-board edges or another nails.

All leading and outside edges of the bottom deck shall be chamfered. The chamfers shall be at least 12 inches long and shall be cut on an approximate 35 degree angle to the face so as to leave an edge adjacent to the chamfer not less than ¼ inch nor more than ½ inch from the outer

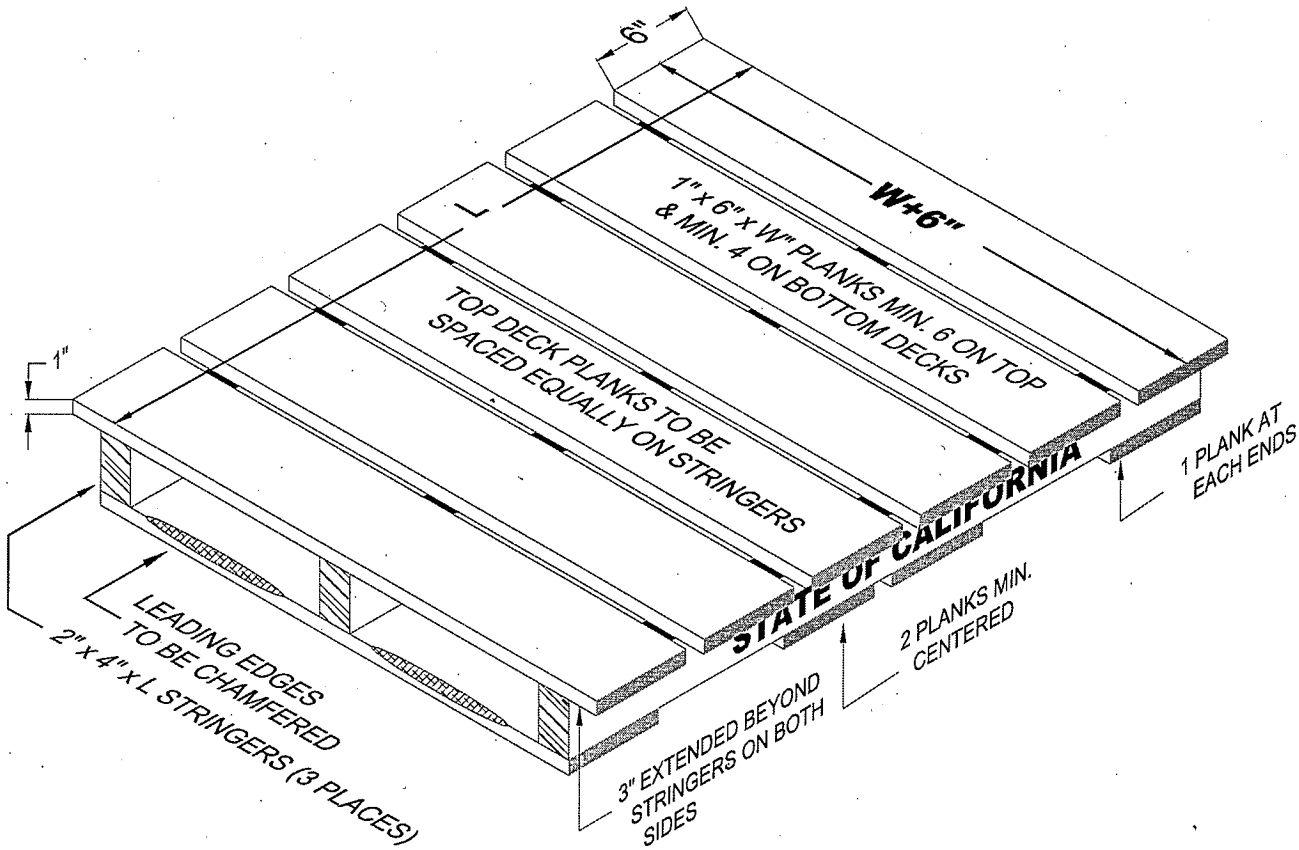


FIG. 2 - TYPE 4
SINGLE WING WOODEN PALLET

edge of the deck-board. The chamfer shall extend to within 3 inches of the stringers. Pallet configuration shall comply with illustration A.

COMMONLY USED PALLET TYPES & SIZE			
SIZE	**TYPE**	**TOP DECK**	**BOTTOM DECK**
1	**2** (Fig. 1)	42"L x 36"W Six 1" x 6" x 36" deck-boards, spaced evenly along the pallet width	42"L x 36"W Min. Four 1" x 6" x 36" boards. One placed each end of the stingers Two at center of the stringers
2	**2** (Fig. 1)	42"L x 42"W Six 1" x 6" x 42" deck-boards, spaced evenly along the pallet width	42"L x 42"W Min. Four 1" x 6" x 42" boards. One placed each end of the stingers Two at center of the stringers
3	**2** (Fig. 1)	44"L x 44"W Six 1" x 6" x 44" deck-boards, spaced evenly along the pallet width	44"L x 44"W Min. Four 1" x 6" x 44" boards. One placed each end of the stingers Two at center of the stringers(Fig. 1)
4	**2** (Fig. 1)	45"L x 36"W Six 1" x 6" x 36" deck-boards, spaced evenly along the pallet width	45"L x 36"W Min. Four 1" x 6" x 36" boards. One placed each end of the stingers Two at center of the stringers
5	**2** (Fig. 1)	46"L x 44"W Six 1" x 6" x 44" deck-boards, spaced evenly along the pallet width	46"L x 44"W Min. Four 1" x 6" x 44" boards. One placed each end of the stingers Two at center of the stringers
6	**2** (Fig. 1)	48"L x 48"W Six 1" x 6" x 48" deck-boards, spaced evenly along the pallet width	48"L x 48"W Min. Four 1" x 6" x 48" boards. One placed each end of the stingers Two at center of the stringers
Note: SIZE 1, TYPE 4 - has a single wing applied to top deck.			
1	**4 (Fig. 2)**	42"L x 36"W Six 1" x 6" x 36" deck-boards, spaced evenly along the pallet width with 3" wings extending beyond the stringers outboard faces	42"L x 30"W Min. Four 1" x 6" x 36" boards. One placed each end of the stingers, Two at center of the stringers

4 SAMPLING AND INSPECTION

This commodity will be sampled and inspected for compliance to this specification as deemed necessary. Sampling and inspection by attributes will be in accordance with ANSI/ASQ Z1.4 1993, Sampling Procedures and Tables for Inspection by Attributes. An inspection lot is defined as one delivery to one agency at one time.

4.1 Workmanship

The pallets shall be free from defects as outlined under Grade "Quality" (QAL) in the "Specifications and Grades", NWPCA.

5 MARKING

Each pallet shall be marked (two places), **"STATE OF CALIFORNIA"**. Marking shall be easily readable, in black letters and on outboard faces of stringers.